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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/511,330	02/23/2000	Eric Andre	9320.99US01	4708
23552	.7590	07/06/2004	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			MOORE, JAMES K	
			ART UNIT	PAPER NUMBER
			2686	19

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/511,330

Applicant(s)

ANDRE ET AL.

Examiner

James K Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 23 February 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 29, 2004 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

3. The drawings are objected to. The commas in the frequencies labeled in Figures 1-3 should be replaced with periods. For example, in Figure 1, below reference number 12, there is shown a frequency labeled as "1217,6". This should be changed to "1217.6".

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

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should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitations "the said first transposition frequency" in line 5, "the said digital conversion frequency" in line 6, and "a second intermediate frequency" in lines 7-10. There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-3 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnstone et al. (U.S. Patent No. 5,898,680) in view of Renard et al. (U.S. Patent No. 6,081,691).

Regarding claims 1, 7 and 10, Johnstone discloses a dual mode radio frequency reception device (user terminal 22) which enables simultaneous reception of multi-carrier digital audio broadcast (DAB) signals in a first frequency band (1467-1492 MHz) and radio global positioning signals (GPS) in a second frequency band. The device comprises a preprocessing module (LNA 90, RF front end 92), and simultaneously outputs to a first processing system (digital broadcast receiver 82) for processing the multi-carrier DAB signals and a second processing system (GPS receiver 84) for processing the radio GPS signals. See Figures 1 and 5; col. 4, lines 4-21 and 30-35; and col. 11, lines 43-58. The device also simultaneously displays the processed multi-carrier DAB signals and the processed radio GPS signals. See col. 14, lines 18-63. Johnstone does not disclose that the preprocessing module includes a pass-band antenna filter in which the pass-band includes the first and second frequency bands.

Renard also discloses a dual mode radio frequency device. The device comprises a preprocessing module including a pass-band antenna filter (12) in which the pass-band includes a first frequency band in which a first set of signals is received

(GLONASS signals) and a second frequency band in which a second set of signals is received (GPS signals). See Figure 1 and col. 6, lines 20-32. Renard teaches that it is cheaper to employ a single receiver architecture which can be used with dual systems rather than two special-purpose receivers. See col. 3, lines 25-50. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Johnstone with the teaching of Renard, such that Johnstone's device comprises a preprocessing module including a pass-band filter in which the pass-band includes the DAB and the GPS frequency bands, in order to employ a single receiver, rather than two separate receivers for receiving both the DAB and GPS signals, and thereby reduce the cost of the device.

Regarding claim 2, Johnstone in view of Renard teaches all of the limitations of claim 1, and Johnstone also teaches that the preprocessing module may comprise a low noise amplifier (LNA 90). See Figure 5.

Regarding claim 3, Johnstone in view of Renard teaches all of the limitations of claim 1, and Johnstone also discloses that the first processing system comprises first digitization means (channel discovery 94 and 96). See col. 11, lines 43-58. It is also inherent that Johnstone's second processing system (the GPS receiver) comprises second digitization means because a digital signal must be recovered. Johnstone does not disclose that the first and second digitization means are controlled by the same analog-digital conversion frequency. However, Renard's dual mode device comprises first digitization means (38) for processing the first set of signals (GLONASS) and second digitization means (34) for processing the second set of signals (GPS), and for

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convenience, the first and second digitization means are controlled by the same analog-digital conversion frequency (F_c). See Figure 1 and col. 7, lines 33-52. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Johnstone's device with the teaching of Renard, such that the first and second digitization means are controlled by the same analog-digital conversion frequency, in order to make the design and manufacture of the device more convenient.

Regarding claim 6, Johnstone in view of Renard teaches all of the limitations of claim 1. Johnstone does not disclose that the device comprises a frequency synthesizer which output into the first and second processing systems and is capable of generating at least two frequencies from the group comprising: a first transposition frequency, a digital conversion frequency, a second transposition frequency used by a transposition stage to an intermediate frequency included in the first processing system, and a second transposition frequency used by a transposition stage to an intermediate frequency included in the second processing system. However, Renard teaches using a single frequency synthesizer to output a first transposition frequency, and second transposition frequencies used by transposition stages (ML2, ML3) to intermediate frequencies included in the first and second processing systems, into the first and second processing systems. See Figure 1 and col. 6, line 45 – col. 7, line 31. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Johnstone's device with the teaching of Renard, such that the device comprises a single frequency synthesizer which outputs into the first and second processing systems and is capable of generating a first transposition frequency, a second

transposition frequency used by a transposition stage to an intermediate frequency included the first processing system, and a second transposition frequency used by a transposition stage to an intermediate frequency included in the second processing system, in order to reduce the number of components and thus the cost of the device.

Regarding claim 8, Johnstone in view of Renard teaches all of the limitations of claim 1, and Johnstone also discloses that the first frequency band is between 1452.192 MHz and 1491.392 MHz. See col. 4, lines 30-35. It is inherent that Johnstone's second frequency band is between 1574.42 MHz and 1576.42 MHz because it is for GPS signals.

Regarding claim 9, Johnstone in view of Renard teaches all of the limitations of claim 1, and Johnstone also discloses that the device is used in a portable multimedia receiver. See col. 4, lines 36-46.

8. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnstone et al. in view of Renard et al. as applied to claim 3 above, and further in view of Green et al. (U.S. Patent No. 5,907,299).

Regarding claim 4, Johnstone in view of Renard teaches all of the limitations of claim 3, but does not teach that the first digitization means includes a delta-sigma pass-band modulator. However, Green teaches that one of the major advantages of analog-digital converters using delta-sigma pass-band modulators is that low-resolution components (which are cheaper than high-resolution components) can be used to process the analog input signal. See col. 2, lines 15-60. It would have been obvious to

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one of ordinary skill in the art at the time of the invention to modify the combination of Johnstone and Renard with Green, such that the first digitization means includes a delta-sigma pass-band modulator, in order to minimize the cost of the analog-digital conversion circuitry.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnstone et al. in view of Renard et al. as applied to claim 3 above, and further in view of Groshong (U.S. Patent No. 6,218,972).

Regarding claim 5, Johnstone in view of Renard teaches all of the limitations of claim 3, but does not teach that the second digitization means includes a "1-bit" quantifier. However, Groshong teaches that one of the advantages of using a "1-bit" quantifier is that it can be theoretically nonlinear. See col. 3, lines 15-53. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the combination of Johnstone and Renard with Groshong, such that the second digitization means includes a "1-bit" quantifier, in order to reduce nonlinearities in the analog-digital conversion circuitry.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ken Moore, whose telephone number is (703) 308-6042. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold, can be reached at (703) 305-4379.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ken Moore

6/23/04

JKM

Charles Appiah
CHARLES APPIAH
PRIMARY EXAMINER